

Lesson 6.1 • Recursive Routines

Name _____ Period _____ Date _____

1. Give the starting value and constant multiplier for each sequence. Then find the fifth term.

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|-------------------------|---------------------------|
| a. 4800, 1200, 300, ... | b. -21, 44.1, -92.61, ... |
| c. 100, -90, 81, ... | d. 100, 101, 102.01, ... |
| e. -5, 1.5, -0.45, ... | f. 3.5, 0.35, 0.035, ... |

2. Use a recursive routine to find the first five terms of the sequence with the given starting value and constant multiplier.

- a. Starting value: 12; multiplier: 1.5
 b. Starting value: 360; multiplier: 0.8
 c. Starting value: -45; multiplier: $-\frac{3}{5}$
 d. Starting value: -9; multiplier: 2.2
 e. Starting value: -1.5; multiplier: $\frac{1}{2}$

3. Use a recursive routine to find the first five terms of the sequence with the given starting value and percent increase or decrease.

- a. Starting value: 16; increases by 50% with each term
 b. Starting value: 24,000; decreases by 80% with each term
 c. Starting value: 7; increases by 100% with each term
 d. Starting value: 40; increases by 120% with each term
 e. Starting value: 100,000; decreases by 35% with each term

4. Use the distributive property to rewrite each expression in an equivalent form. For example, you can write $500(1 + 0.05)$ as $500 + 500(0.05)$.

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|--------------------|----------------------|-----------------------|
| a. $40 + 40(0.8)$ | b. $550 - 550(0.03)$ | c. $W + Ws$ |
| d. $25(1 - 0.04)$ | e. $35 - 35(0.95)$ | f. $10(1 + 0.25)$ |
| g. $15 + 15(0.12)$ | h. $0.02(1 - 0.15)$ | i. $10,000(1 + 0.01)$ |

5. Burke's Discount Clothing has a "Must Go" rack. The price of each item on the rack is decreased by 10% each day until the item is sold. On February 2, a leather jacket on the rack is priced at \$45.00.

- a. Write a recursive routine to show the price of the jacket on subsequent days.
 b. What will the jacket cost on February 6?
 c. When will the jacket be priced less than \$20.00?